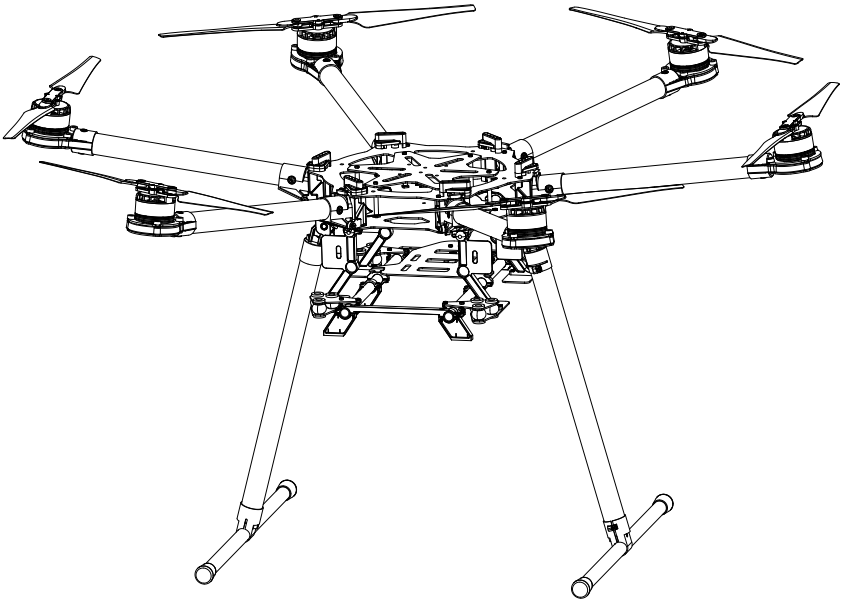
# RS900

## User Manual V1.0

2014.12

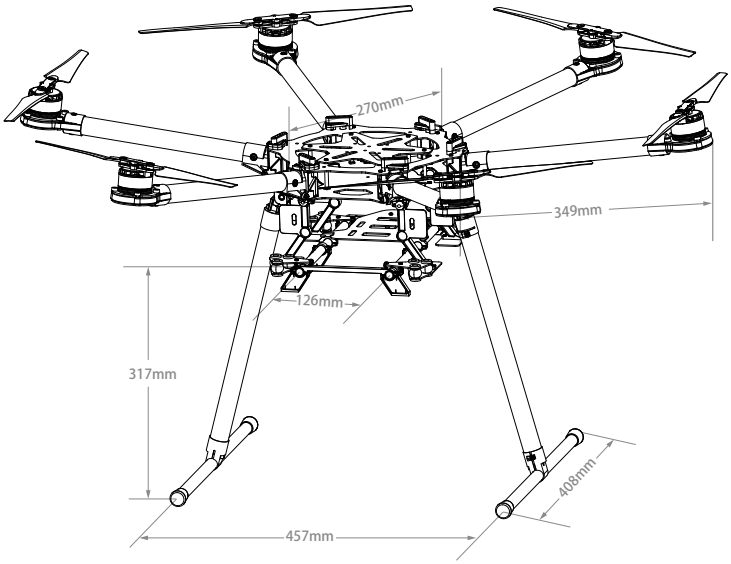


# Disclaimer

Thank you for purchasing the RS900.
In using this product, you hereby agree to this disclaimer and signify that you have understood all points completely. When assembling this product, follow all instructions carefully.
The manufacturer and seller assume no liability for any damage or injury arising from the use of this product.

# About

The RS900 is designed for professional aerial photography and cinematography. It is user friendly, safe,stabilized and easy to fly while its integrated design makes assembly and configuration simple and fast. Retractable landing gear, vibration dampers, slightly angled arms and a minimalized gimbal mount allow for a clear 360 degree view from the camera. A patented power distribution board, built-in high-speed ESCs and motors with high efficiency propellers ensure dynamic stability and maximized power efficiency.



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# Cautions

When flying, the rotating propellers may cause serious damage and injury. Please fly safe at all times.

## Assembly Cautions

1. Use a bracket to mount the GPS module on the center frame to avoid interference with the power board.
2. Ensure the IMU is mounted with the arrow pointing toward the nose of the aircraft.
3. If using a receiver, attach it under the bottom board of the center frame with the end of the antenna facing downwards and away from obstructions to avoid signal loss.
4. Ensure frame arms are mounted correctly.

a) Motor mounts with CCW marks should be mounted to the center frame positions with the following marks: M1, M3 and M5.

b) Motor mounts with CW marks should be mounted to the center frame positions with the following marks: M2, M4, and M6.

5. Do not remove any glued-in screws.
6. Screws that already have blue glue can be used once without thread locker. On other occasions, apply appropriate thread locker first.
7. The RS900 should be lifted off the ground when testing landing gear or recalibrating servo travel.

## Flight Cautions

1. ESCs are not water-proof, please do not fly in rain or snow.
2. Ensure all soft dampers and vibration absorbers are in good condition before every flight. If not, replace immediately. Otherwise, the flight performance of your aircraft will be adversely affected.
3. Ensure all parts are in good condition before each flight. Do not fly with worn or broken parts.
4. Ensure propellers and motors are installed correctly and propelers are unfolded before flying.
5. Ensure ESC signal connectors and power cable connectors are tight before every flight.
6. When flying, maintain a safe distance away from people, buildings, high-voltage lines, tall trees, water and other hazards.
7. Use only 6S LiPo batteries for the power supply.
8. Ensure all output signals from M1 to M6 are in proper working order when using the DJI A2 flight control system to avoid damage or injury.
9. Do not overload the system.
10. Do not get close to or touch motors or propellers when they are spinning as this can cause serious injury.
11. Disconnect the battery and remove the camera during transportation to avoid damage or injury.

## Others

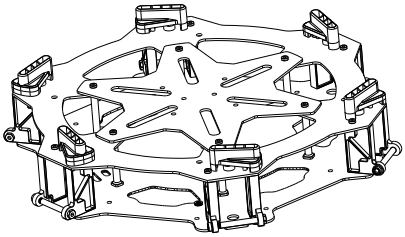
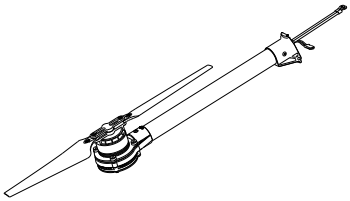
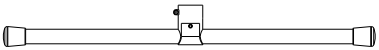
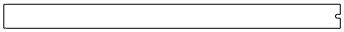
If you have any problems you cannot resolve, contact our customer service.

# Legend

⚠ Important

Hints and Tips

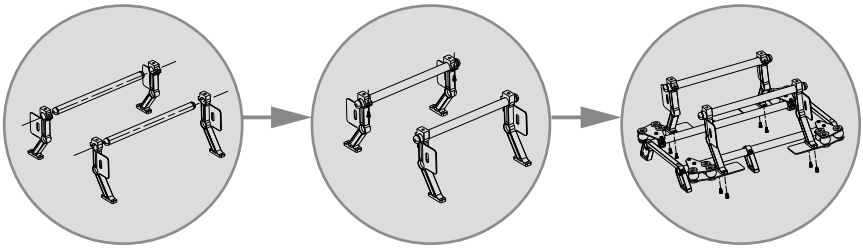
# In The Box

| Center Frame ×1 | Frame Arms ×6 |
| --- | --- |
|  |  |
| **Landing Skid Tubes ×2 (with Silicone Rubber Dampers)** | **Landing Gear Legs ×2** |
|  |  |
| **GPS Collapsible Mount ×1** | |
| | |
| **Screw x 1** | **Accessories Package ×1** |
| M4 x 35 (Mounting frame arm)<br>M3 x 6 (Mounting landing gear) | CW propellers ×5<br>CCW propellers ×5<br>Magic tapes × 2<br>The red knobs ×6<br>Landing gear leg rings ×4 |

## Tools Required

| Tools | Usage |
| --- | --- |
| 2.0mm Hex Wrench, 2.5mm Hex Wrench | Mounting screws. |
| Thread Locker | Fastening screws. |
| Mounting receiver, controller and other modules. | Binding devices and wires. |
| Foam Double Sided Adhesive Tape | Mounting receiver, controller and other modules. |

# Load Mounting

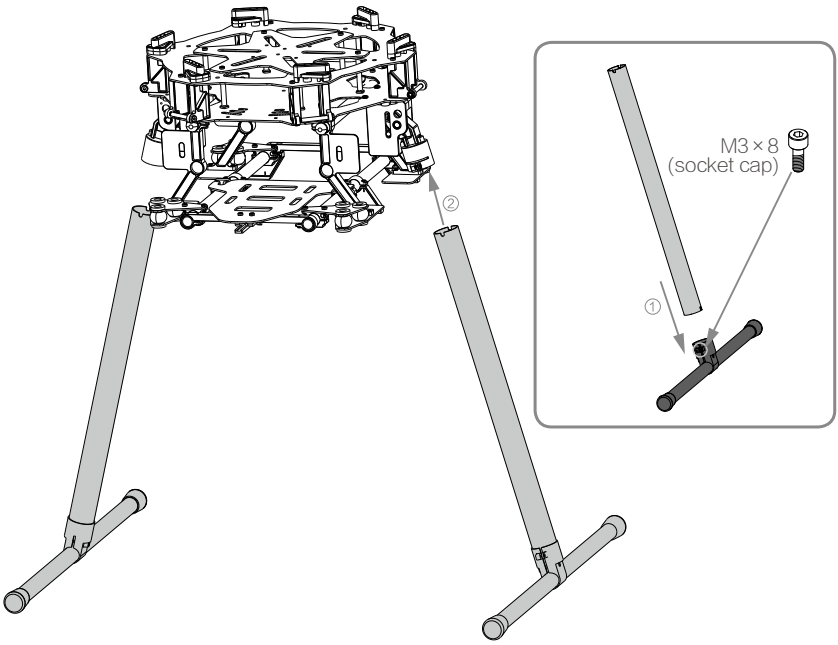




# Mounting the Landing Gear

## Instructions

1. Put one landing gear leg ring onto each landing gear leg.
2. Insert the landing gear leg into connection point on the center frame. Affix in place with M3 × 8 screws.



# Mounting Frame Arms

## Instructions

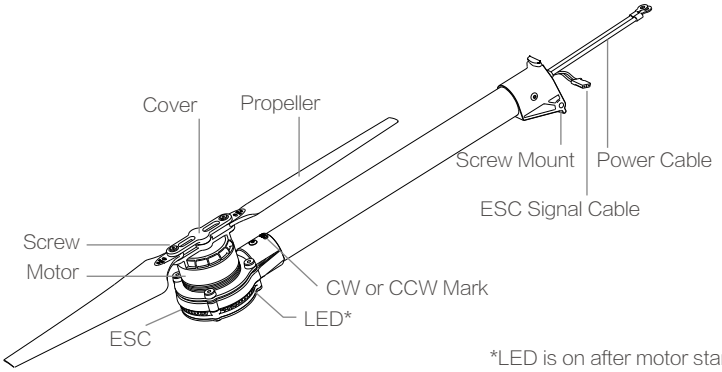
1. Prepare the arms.

(1) Check all propellers for cracks, then install and screw each propeller cover on tightly.

(2) Ensure all motors are mounted firmly and rotate freely.

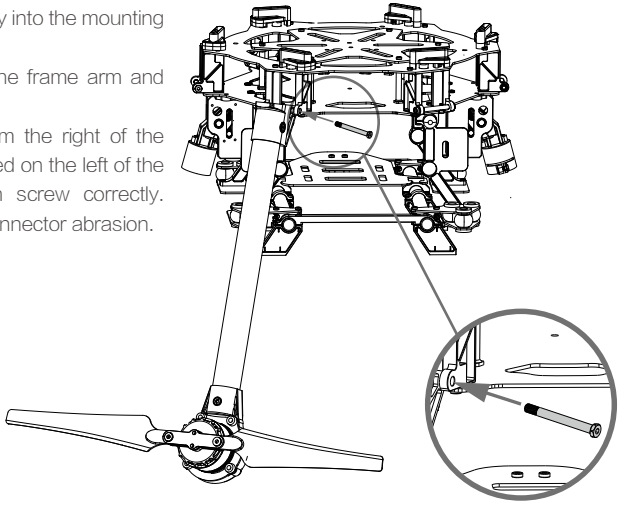
(3) Mount all arms with red propeller covers to M1 and M2 to indicate the nose of the RS900.

(4) Identify the CW and CCW marks on the arms. Mount the arms with the CCW mark to the M1, M3 and M5 positions of the center frame. The arms with the CW mark should be mounted to the M2, M4 and M6 positions of the center frame.

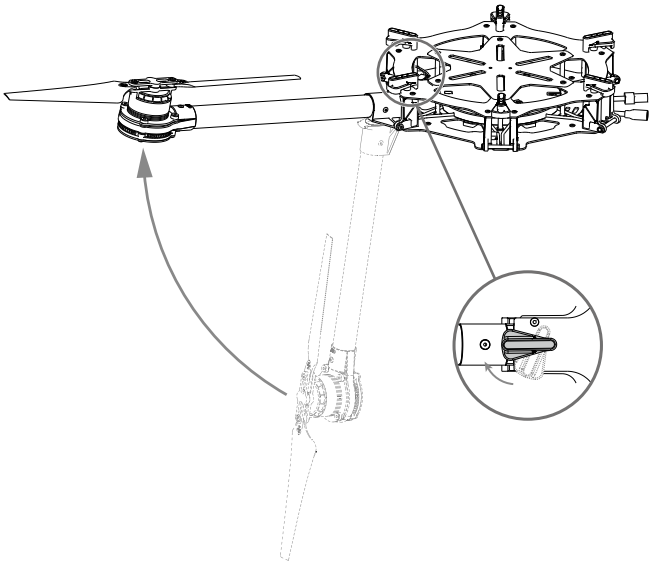



*LED is on after motor started.

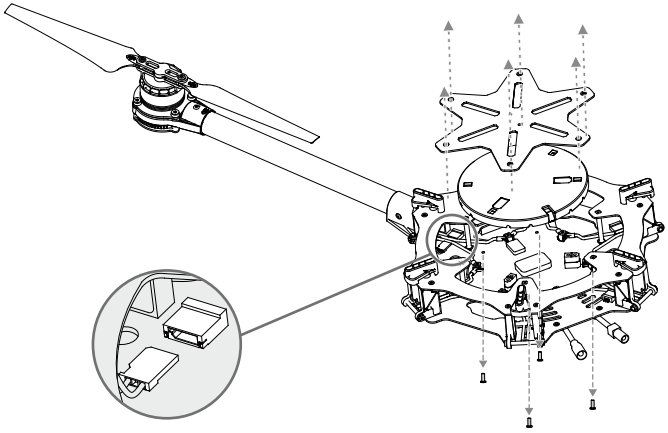
2. Insert each frame arm vertically into the mounting area on the center frame.
3. Line up the screw holes of the frame arm and center frame.
4. Insert the M4×38 screw from the right of the frame arm (the thread is located on the left of the screw mount). Tighten each screw correctly. Over tightening may lead to connector abrasion.



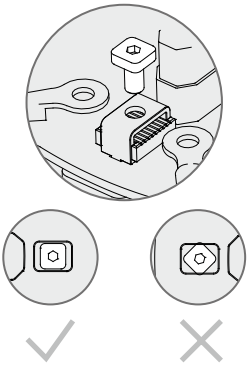
5. Gently lift the frame arm.
6. Twist the red knob to lock each arm in place. Be sure there is an audible click, which indicates a proper lock. Check the arm for movement. To store, untwist the knob and lower the frame arm.

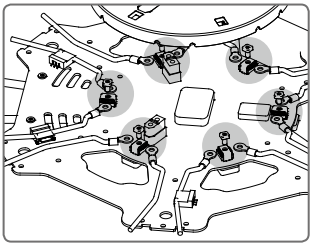


7. Now unscrew 6 screws (M2.5 × 8 cheese) on the upper plate of the center frame and remove the upper plate. Then unscrew the 4 screws (M3 × 8 self-tapping, found under the center frame) of the round cover and remove it to gain access to the ESC and power cable installation area.
8. Plug each ESC signal cable into the slot near each arm on the center frame.

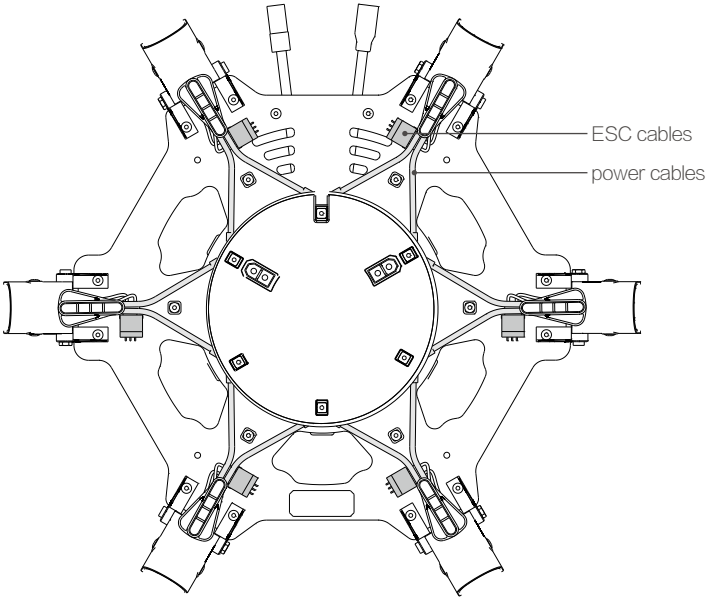


9. Connect the power cables to the center frame. Each cable must be screwed into a positive (+) or negative (−) gold bracket. Each bracket will have two cables of the same color screwed into it. Red cables are positive and black cables are negative.
10. To ensure a reliable connection, rotate the screw until it is both tight and parallel to the connecting bracket.

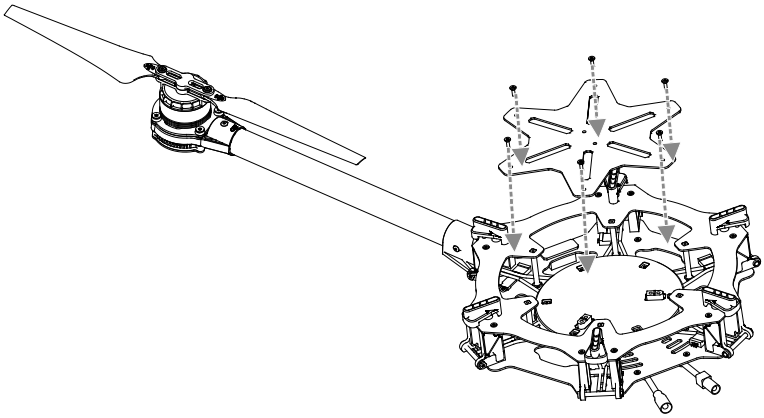




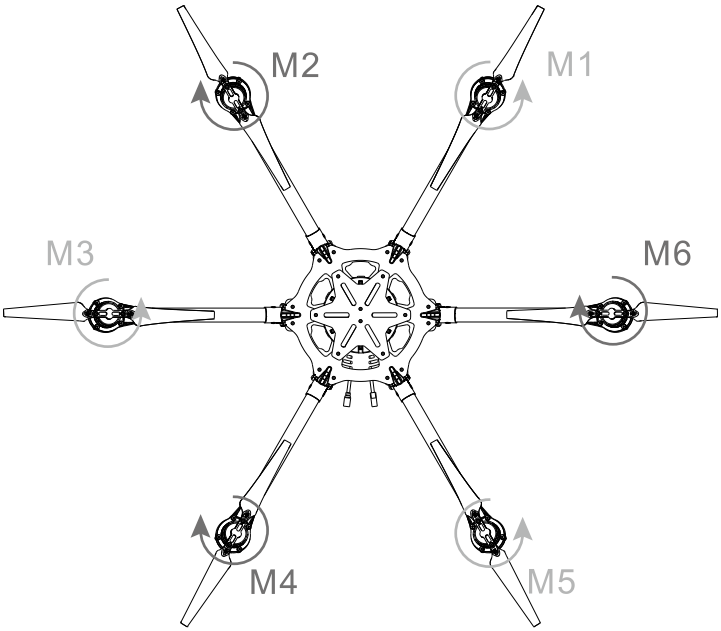
11. Ensure all ESC cables, and power cables are correctly installed onto the center frame



12. Replace the round cover of the center plate, and re-tighten the 4 screws (M3×8 self-tapping). Then replace the upper plate of the center frame, and re-tighten the 6 screws (M2.5×8 cheese).



13. Double check all frame arms. Arms M1 and M2 are the forward facing (nose), arms M4 and M5 are the tail. Seen from the top, motors on arms M1, M3 and M5 rotate counter clockwise while those on arms M2, M4 and M6 rotate clockwise.

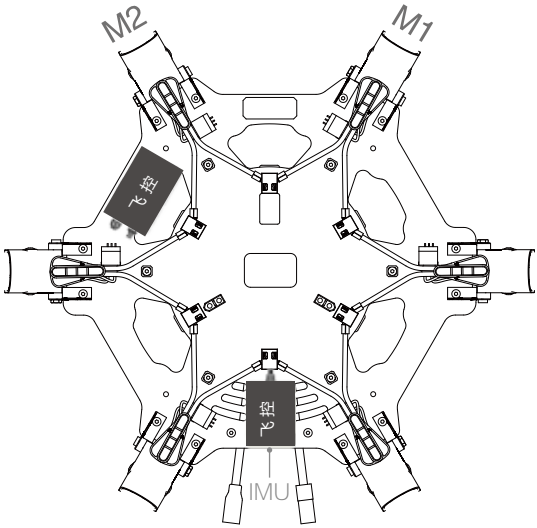


# Mounting Electronics and Wiring

Eight positions are reserved for mounting a flight control system, wireless video transmission module, receiver, and other accessories.

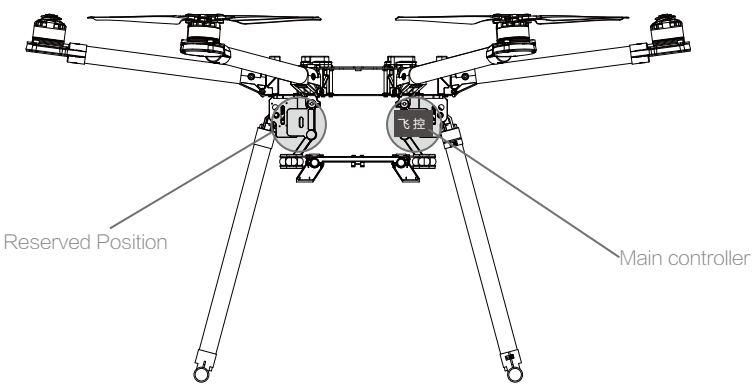
## Instructions

1. Attach IMU module to the IMU area of the center frame. Ensure that it points toward the nose.
2. Attach the PMU module to the center frame.

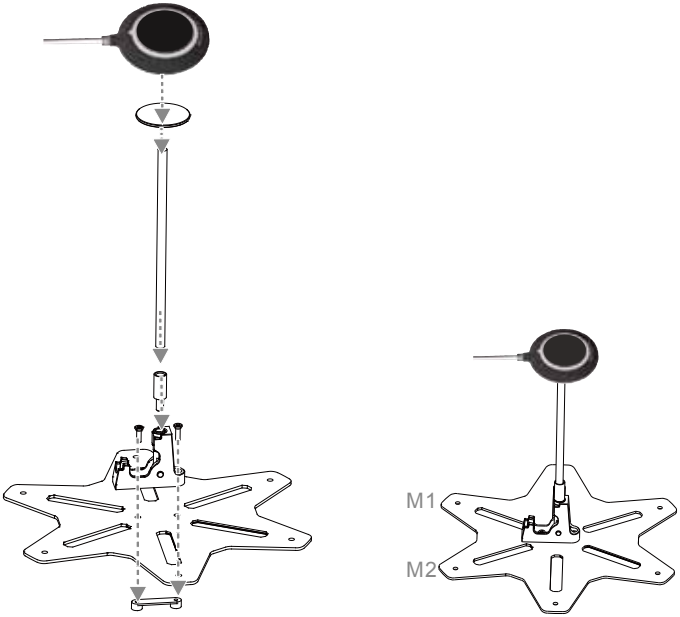



⚠ Only mount the IMU in the IMU position of the center frame.

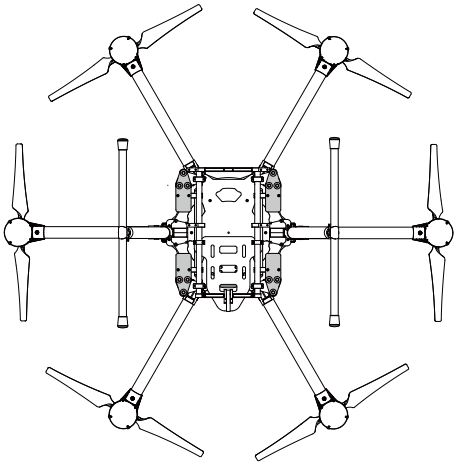
3. Mount the flight controller in the reserved position near the PMU module.



4. Attach the GPS collapsible mount to the center frame using M2.5×8 screws.
5. Mount a GPS module to the GPS mount with a bracket. Ensure the arrow points toward the nose and avoid catching your fingers in the bracket when folding for transportation.




6. The other reserved positions are indicated in the diagram below and can be used for mounting a receiver, LED flight indicator, iOSD module and wireless video transmission module.

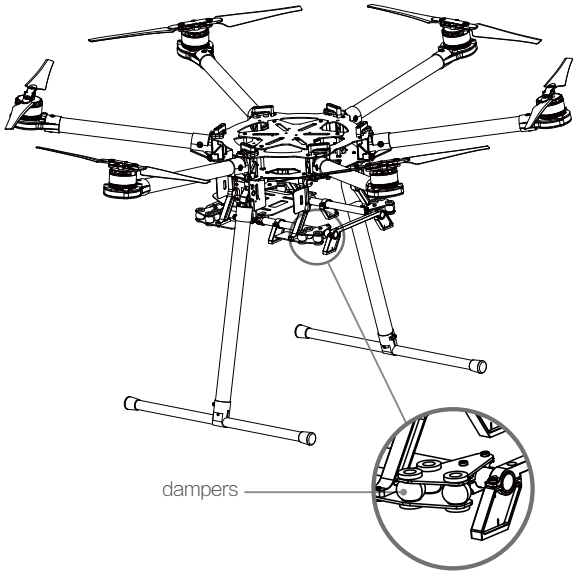


7. Check that every anti-drop screw has been firmly installed in the reserved positions. Thread locker is recommended.

(1) Remove the anti-drop screws to apply appropriate thread locker.

(2) Replace and tighten.

8. Note that the dampers are 30° silicon rubber. If you use other dampers or vibration absorbing balls, the quality of your aerial photography may be affected.

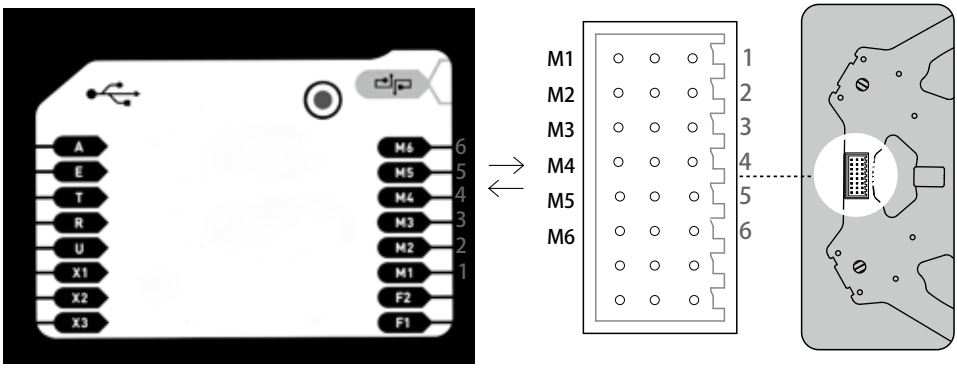



⚠
- Mount the GPS with a bracket to avoid interference from the center frame power board.
- Use glue to install the GPS bracket. Ensure it is firm and stable before every flight.
- Always test motors using the Assistant Software after installation. Refer to your flight control system user manual for details.

## Connecting the flight controller to the center frame

1. Connect the flight control system according to your flight control system user manual.
2. Plug in the connector sets to the ESC signal outlet on the center frame. Then plug in the connector set to flight controller as shown below.
   (1) Yellow 4-pin cables are for M1~ M4 connections. The yellow cable should be connected to M1.
   (2) Brown 4-pin cables are for M5~ M6 connections. The brown cable should be connected to M5.
   (3) Black 4-pin cables are for four continuous ground pins connections. M1~M4 are connected as the following diagram shows.

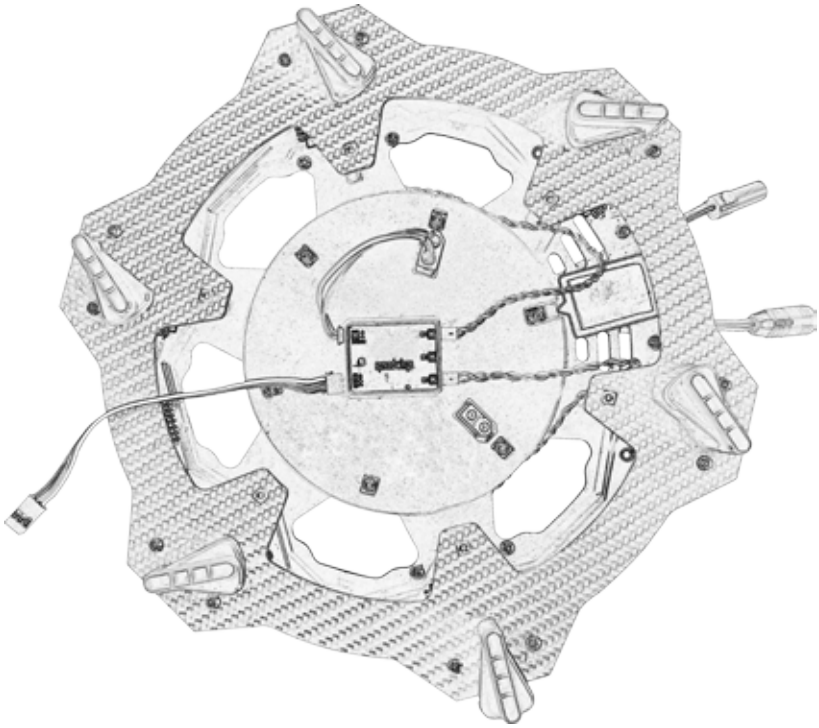





Flight Controller

The ESC Signal Outlet

# Connecting the flight controller and landing gear





⚠ • If right and left servo cables are reversed, the landing gear will not function properly.
• Connect all wires carefully and neatly to avoid cable damage caused by frame edges.

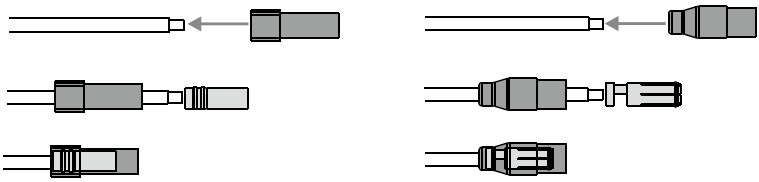
# Installing Battery

## Soldering battery connectors

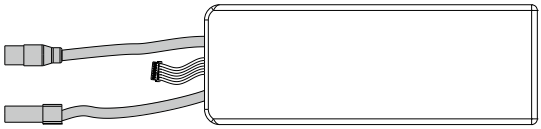
AS150 spark-proof connectors are used. They must be soldered to your battery power cables.

1. Remove the original battery connectors. Avoid cutting the power and ground cables at the same time, as this can cause a short circuit. We recommend wrapping unsoldered cables with insulating tape to prevent accidental connections.
2. Pass the black ground wire through the black housing. After passing the wire through, solder the femalebullet connector to the ground wire. Wait for the soldered connection to cool, then pull the housing back over the bullet connector.
3. Screw and pass the red power wire through the red housing. After passing the wire through, solder the male bullet connector to the power wire. Wait for the soldered connection to cool, and then screw and pull the housing back over the bullet connector.





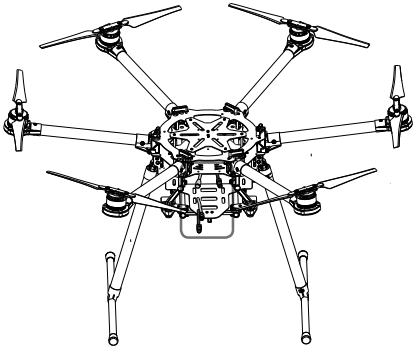
Connectors soldering diagram

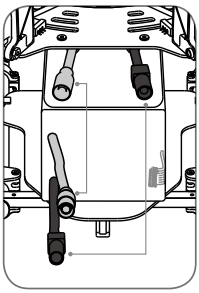


Connectors are soldered

## Installing and connecting battery

1. Attach battery to battery tray. Do not use an oversized battery. Maximum installation dimension is 80mm X120mm X 200mm.
2. Connect the black connector and then the red connector to power on. Disconnect the red connector then black connector to power off.



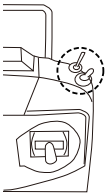


# Setting Up the Landing Gear

Using a 2-position RC transmitter switch, landing gear retraction can be carried out remotely.

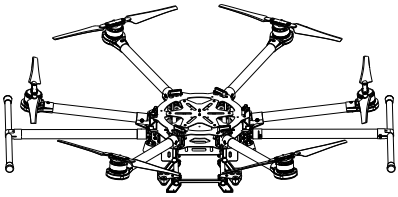
### Setting up the transmitter

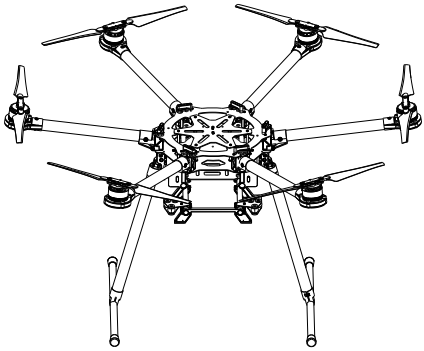
Select a 2-position switch (default setting is OK) as the control input for the landing gear. Ensure the corresponding receiver port is connected to the “IN” port on control board.



Upper: Toggle the switch to this position to raise the landing gear.

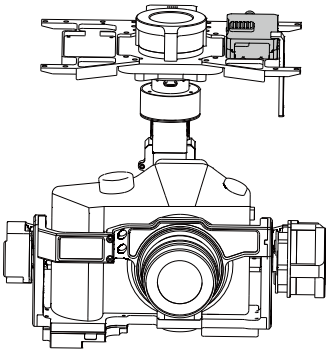
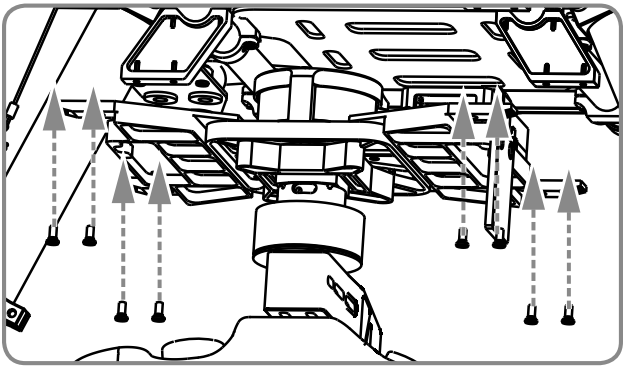
Lower: Toggle the switch to this position to lower the landing gear.





# Mounting the Gimbal

Before assembling the gimbal, install the GCU as shown below. Be sure to install on the side as shown below.



The connectors on gimbal should be removed for better performance, then the gimbal can be mounted to the lower connection points.